An

Essay on Pertussis,

respectfully submitted to the

Trustees

and

Medical Faculty

of the

University of Pennsylvania.

for the

Degree of M.D.

by

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The greatest obstacles which the practitioner of medicine has to encounter, arise from the difficulty of establishing a correct diagnosis of the various forms of disease which fall under his notice. Although a number of physicians entertaining similar opinions of the nature and causes of particular affections, may sometimes vary in their practice in some particulars of minor importance, yet all controversies of practical importance, may be traced to a difference of opinion respecting the nature or location of a disease. Hence the discrimination necessary to ascertain the diagnosis, is a faculty of the first importance to the practitioner of the healing art, without which, his medicines might well be compared to the unfortunate Trojans, who deceived by a flimsy disguise, hurled the terrors of the battle upon the heads of their devoted friends.

It is not always an easy matter to guard against the deceptive nature of certain symptoms, even when occurring in intelligent patients, who can understand our queries and give rational testimony. Much more intricate is the task to discover in the unconscious infant the cause of its dis=

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tress. When we reflect, therefore, on the numerous and ingenious controversies which have arisen from cases in which we have enjoyed every advantage that could be derived from conversation with the suffering individuals, we must acknowledge that the diseases of young children, although not generally so intractable as many of those which occur in advanced life, require a great degree of caution and sagacity to ascertain their nature and apply their appropriate remedies. Hydrocephalus the insidious enemy of our species, which ranks so high among the allegorical ministers of the Court of Death, is a good example by which to enforce these remarks. How often is its devoted victim drenched with anthelmintic decoctions, with no other effect than to weaken the confidence of the practitioner in this class of remedies, while his patient sinks prematurely to the tomb!

But it is unnecessary to adduce instances exemplary of the great importance of peculiar skill, exquisite investigation and unprejudiced decision, in the treatment of the diseases of children. I hope, therefore that if in the following treatise on a disease most prevalent at the earlier periods of our existence, instances of unnecessary minuteness occur, they will be attributed to at least a desire of being useful.

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Pertussis is defined to be a convulsive cough, interrupted by a full and sonorous inspiration and terminating in a vomiting, or an expectoration of phlegm

The history of pertussis is obscure; some of the older writers have supposed that it originated in Africa, whence it was translated into Europe. It has for a long time, however, been known in the latter country and it does not appear that its original reference to Africa is any thing more than conjecture, promulgated, perhaps, by the advocates of its contagious nature, who would rather avail themselves of the obscurity of its history than acknowledge its spontaneous origin.

It is alleged to be one of those diseases which attack the human constitution but once and being more prevalent among children than adults: hence another argument has been drawn in favour of its being specifically contagious. There are some instances however where the disease has been taken twice in the course of life. Dr Chapman relates two cases of this kind, one of an elderly lady and another of an elderly gentleman both of whom were affected with it in early life - and during the last summer I witnessed the same in a gentleman who grad

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nated in this university last April; he assured me that he perfectly remembered having had the disease very severely about twelve years ago.

Two opinions still exist respecting the cause of pertussis. That it may be communicated from one individual to another, cannot be positively denied, when we consider the current of tes[illegible] in support of it, and that it may also arise in an individual not associated from the rest of the species, is satisfactorily [illegible] in my opinion in a case which I am supported by good authority. The instance was taken under my own observation which to me is conclusive on this point; it occurred in a child on a [illegible] from all the principal public roads. The child had not been to a neighbours for three months previous to the accession of the disease, very few visitors had been at the house in that time and not another case of it existed within a circumference of at least five miles; in that, the parents could not assign a cause for its occurrence and doubted its being the disease until the more violent symptoms developed themselves too plainly to be mistaken.

I am conscious that I have the authority of Willis Watt

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* Dr. Serieux

Heberden Ferriar and many others to contend with; but the spontaneous appearance of the disease in a place remote from towns and in individuals who have not been exposed to intercourse with those who may have resided in hooping districts, induces me quietly to acquiesce in their opinions. Even had I not seen a single case of the disease, occurring as I have stated, I trust that to be influenced by the testimony of Dr Cullen and Dr Kelly would be sufficient to shield me from the imputation of being presumptuous in opposing such weight of authority as I have enumerated.

Dr Cullen alleges that it is both "epidemic and contagious. From what we know of the laws which govern these two classes of diseases we must certainly differ from his opinion. We all know that those diseases which depend upon a specific contagion are never influenced by the action of the atmosphere, except as regards their degree of violence, being equally contagious in all situations.

Dr Heberden* remarks, that Hooping cough evinces a tendency to unite with other diseases more than any with which he is acquainted, arising from specific contagion." I found it says

*Dr Ferriar.

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he after being nearly lost in combination with one of the most powerful of the exanthemata, (measles) recruit its forces and extinguish the supervening disease. again, most of these diseases which we from contagion are never taken but once whereas those of an epidemic character are liable to be taken as often as we are exposed to the causes which produce them. As I have already stated, the advocates of its contagious nature, ground their arguments partly on this head; but I think that I can account for the phenomena of its being taken rarely a second time. We well know that many diseases which are epidemic as Plague, Yellow Fever &c. owing to the sus ceptibility being greatly impaired, are not so easily taken a second time. Shall we not then suppose that pertussis may be ~~so is~~ affected by the same laws, and, losing that susceptibility to a greater extent than is common with other epidemics, and that where the disease is taken a second time it has been retained to a greater degree than is usual; owing to some peculiarity of constitution.

From the preceding remarks it must appear, that I am inclined to believe in the non-contagious nature of hooping cough

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as the point however is not yet settled and some doubts still exist respecting it, I should if consulted on the subject by parents always place myself on the safe side of the question, and take the same precautions as I should were I to believe it a contagious disease.

There has been much difference of opinion respecting the true seat of pertussis and it was not until the treatise of Dr Watt appeared, that we were in possession of a true knowledge of it. Willis supposed it to be seated in the breast, Harvey in the stomach and Stone, an inflammation of the larynx and pharynx from indigestion or some other ~~of the~~ gastric affection. Dr Watt, by a great many careful examinations post mortem, has ascertained that it is seated in the mucous membrane of the larynx, trachea, bronchia and air cells of the lungs; and represents it as always being an inflammatory disease.

Pertussis is said to occur in children [illegible] adults, which, I presume, can be accounted for in the following manner. Few children escape the disease and as it is one that does not often attack the same constitution a

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second time. It is rarely met with in adults yet I have no doubt that the latter are equally susceptible of it and could we collect a number of persons who had escaped the disease in their infancy and place them in a situation where the disease prevailed, they would be found to take it as readily as children.

[illegible] commence [illegible] a common catarrh, with an increased lachrymal secretion; the eyes [illegible] short time [illegible] but [illegible] old, [illegible], that at first we often mistake it for catarrh; in a short time, however, it begins to make its attacks [illegible] and with the [illegible] in the intervals. The [illegible] in advance [illegible] about the [illegible] or the end of the third week, when it is [illegible]. The eruption of hives [illegible] and fever [illegible] with great rapidity [illegible] powers of [illegible], when a vomiting [illegible] and [illegible], where sudden expectoration of phlegm or a vomiting terminates the paroxysm. The [illegible] during the [illegible], no that

dren, particularly, resembles the chattering of a monkey, as has been [illegible] by Dr Burns; in adults, however, it seems more to resemble a fit of [illegible] laughter. At this time the [illegible] of the [illegible] are [illegible] with blood, often to such a degree as to produce hemorrhage from the eyes, [illegible] and nose, and [illegible] [illegible] the other.

Intuffer makes its attack most frequently at nights, or when the patient is in a recumbent posture. This can be accounted for, as in [illegible] of the lungs, by the decumbent position which [illegible] naturally induces. Hence, the patient is often [illegible] from sleep, and in order to relieve himself, is obliged to start into an erect posture.

The disease is commonly attended throughout with fever, which, in the violence of the disease, is very slight. The stomach is generally deranged, the appetite not very good, the bowels are almost always in a constipated condition; in [illegible] I have seen a case where there was a diarrhoea resulting in the [illegible], which was stopped by means of the pill given at night with the view of palliating the paroxysms.

The alimentary canal in most cases contains a [illegible]

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rable quantity of acid matter as is indicated in the discharges by vomiting and stool.

Respecting the state of the pulse, many attempts have been made to describe it, but no one description will answer as a general guide. Dr Ferriar, in his medical histories, has remarked that the pulse is quick and frequent in the commencement and as the disease advances it becomes small and thready. I am inclined that this is not always the case. I have seen cases where the pulse continued nearly natural throughout, except there accelerated by the fits of coughing. This is more particularly the case where the subject of the disease is an adult: very young children, however, are an exception to this, and with them, Dr Ferriars description is generally correct. Mostly, the pulse bears more or less of the inflammatory character from the commencement and continues full, quick and frequent until the disease begins to decline when with it, it abates generally.

The duration of hooping cough is commonly about nine weeks - three weeks in attaining its height, three weeks at its height and three weeks in abating. However, much depends

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upon the season of the year. It is a common opinion in the country that if the disease be taken in the fall it will not leave the patient untill the spring, or so long as cold weather lasts.

Treatment. When we are called to a patient labouring under this disease our first object is, if much arterial action exist, to reduce it by means of venesection. This, when the child is robust and can bear it, will be found highly beneficial, even when not much increase of fever is present, but many practitioners hesitate to perform it when the patient is so young, [illegible] they [illegible] to the pre[illegible] of parents. But when [illegible], [illegible] the fears of the child interfere with our practice. Children will bear venesection very well and certainly as there can be substituted for it which will not with equal advantage in the early stages of this disease. It acts not only by reducing inflammation, but prevents the determination of [illegible] to the lungs [illegible], an object of no small importance in the treatment.

After having employed venesection, we are next to re-

sent to emetics and purges with a view of clearing out the [illegible], and, [illegible] in [illegible] contains considerable quantities of foul and offensive matter. Emetics act only assist in this, but by their diaphoretic and expectorant powers, prove a most valuable remedy.

The Tart: Emetic has been given and answers very well, but a better emetic in this disease is a combination of white vitriol and Ipecacuanha. It was spoken of in the highest terms by Dr Rush, and almost [illegible] first times at this day, [illegible] the [illegible]. It must be repeated two or three times a day according to the nature of the case and the decrease [illegible] the age of the [illegible].

It [illegible] recommended to give the same medicine in nauseating doses in the intervals, but the wine of Ipecac [illegible] as good.

When we have emptied the stomach we must open the bowels; this is to be done with calomel, and they are afterwards to be kept in a healthy condition by the same medicine or castor oil.

When congestion takes place in the lungs we may do

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ing great relief from the application of Blisters, Cups or Leeches to the breast; the former, however, should not be resorted to untill after mortification has been performed and inflammatory action has subsided, for in almost every instance where this has not been attended to they have been found entirely useless and in many cases highly injurious.

Of the remedies which are adapted to the second stage of the disease, we have a list, which to enumerate, would swell this essay to too great an extent. I must therefore content myself with selecting those only which are found to be most efficacious.

The first which I am to notice is [illegible]. Of the [illegible] power efficacy of this medicine as a palliative, there can be no doubt, and without it we should experience the greatest difficulties in the management of patients. It calms irritation, moderates the violence of the spasm and affords the greatest relief, particularly at night. It may be administered either in the form of Laudanum or paregoric; but the best mode, in my

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opinion is a combination of the latter with antimonial wine. The proportions are thirty drops of Paregoric to ten or twelve of the antimonial wine, mixed with a little sugar and water: it is very pleasant, and few children will refuse to take it. This is a dose for children from one year and upwards old.

[illegible]

Most of the other narcotics have been used to answer a similar indication, but as they all act upon nearly the same principle, I shall only notice one or two of them which have been recommended by respectable authority.

Of these, the cicuta appears to have attracted the most attention, and by Dr Butter ~~was~~ is presumed to be a most valuable remedy; but the result of the trials made with it by many respectable practitioners, has terminated in a loss of confidence in its powers and that it is in every respect inferior to Opium.

It was suggested by Dr [illegible] that the Stramonium might [illegible] in hooping cough from its being so valu[illegible] [illegible] in [illegible]. I have [illegible] with repeated [illegible], but I [illegible] [illegible] to [illegible].

Leaving, therefore, the remedies I am next to mention [illegible] of the [illegible], by authors, [illegible] = [illegible]. As such, the Alkaline [illegible] recommended by Dr [illegible] of London, and one of these [illegible], a formula prescription of his, which is as follows, viz.

℞ Carb Sodae grs iii
Vin Ipecac gtt v
Tinct opii gtt i
Aqua Fontan ℥ i

This may be given to a child one year old as often as [illegible] may require.

There is another recipe which [illegible], the basis of which is potash, and it is the last I am to take notice of. The following is taken from Underwood on the diseases of children.

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A teaspoonful may be given, pro re nata.
That the alkalies are a valuable class of remedies, no one will deny but we cannot believe that any of them are justly entitled to the name of specific.

When [illegible] speaking the alkalies I must say some thing of a new remedy in this disease. I have reference to a [illegible] which has long been used by Dr Physick in the Cardialgia and gastrodynia of dyspeptic patients. It is made as follows Take of best hickory ashes, 1 quart, of soot, a [illegible] full, [illegible] quart [illegible] water, [illegible]. The dose for an adult [illegible].

When I, on the occasion, in a former lecture when I stated to, [illegible] suggested that this [illegible] might probably possess some valuable properties as a remedy in this disease, and from the experiments made with it, by a graduate of this University from the south, his ideas are proved to be correct. The gentleman alluded to states that the dis

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case made its appearance among the negroes of a plantation and from the above hints was disposed to try this remedy, and in almost every instance, he found that it very soon effected a cure. For this fact I have unquestionable authority.

Vaccination has been employed for some time as a remedy, in hooping cough and appears to have many advocates, particularly throughout New Jersey. I was lately told by one of the most respectable physicians in that state, that he had tried it in a number of cases and found in every instance that as soon as the system became affected by the [illegible] vaccine virus, the cough was entirely [illegible] and [illegible] day, the cough was entirely eradicated. As this [illegible] I have not [illegible], but from the many attesta tions which I have [illegible] of its efficacy, I should be disposed to place considerable confidence in it.

The tincture of Cantharides, when employed so as to produce a slight [illegible], has been highly recommended and, indeed, I have seen more good resulting from its practice than any other [illegible] which I have adopted.

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Many of the antispasmodics used at one time it might be said in bringing cough, but there are now only two or three of them which have any claims to our attention. I think to the castor, musk and asafoetida. The first of these medicines, although at one time praised very highly, is now falling into disrepute; but the two latter maintain a respectable standing among the remedies in this disease. The natural musk has been highly extolled but it is so extremely disagreeable that children are with great difficulty made to take it. The forms of administering it are in julep, emulsion or injection.

The artificial musk has been used with equal advantage and some practitioners think it even superior to the natural. The doses of the two kinds are nearly the same and they may be administered in similar formulae the best mode, however, of prescribing the artificial musk is in form of Baxters Tincture, which is made of two ounces of alcohol to two drachms of the musk; of which, the dose for a child two years old, is four or five drops. The Watery solution of Assafoetida is consid=

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ered as a valuable remedy in this disease and is very much employed in this city. it is made by rubbing down two drams of the medicine in eight ounces of hot water, of which the dose is a table spoonfull for a child four or five years old.

To this list of remedies for hooping cough, might be added some of the tonics, particularly the bark and arsenic. But as they are of not much importance compared with many of those which I have already enumerated, I think it is better to leave them entirely out.

The diet in hooping cough, as in all other inflammatory diseases, should consist principally, if not entirely, of vegetable food and great care should be taken that the patient is not exposed to the changes of the weather. Flannel should be worn next to the skin and after the inflammation has subsided, a removal to another part of the country will be found one of the most advantageous of our remedies.